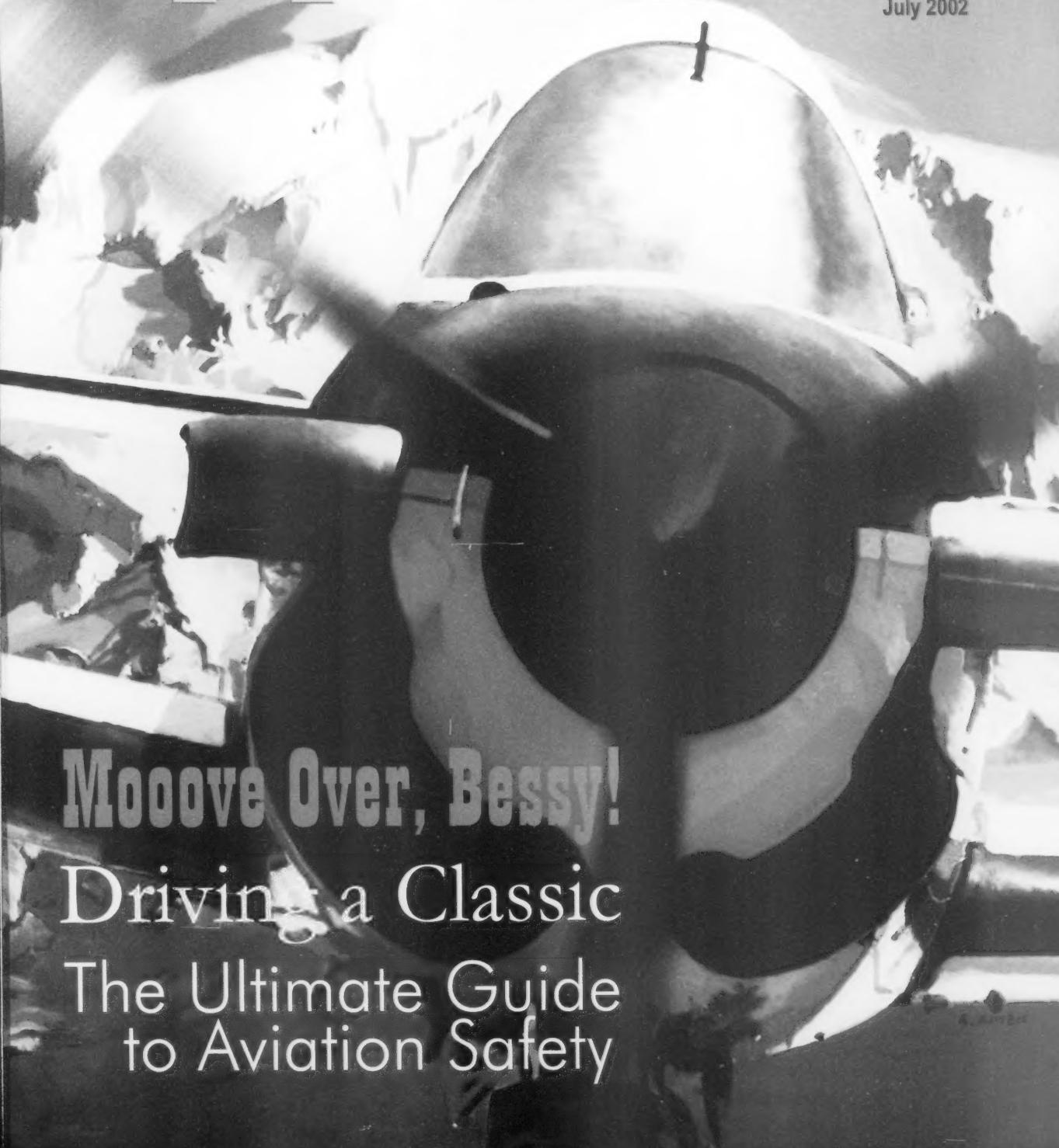


THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

July 2002



Mooove Over, Bessy!

Driving a Classic

The Ultimate Guide
to Aviation Safety

approach

The Naval Safety Center's Aviation Magazine

July 2002 Volume 47 No. 7
On the Cover A T-34 Mentor.

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Mission Statement

Mishaps waste our time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness.

This magazine's goal is to help make sure that personnel can devote their time and energy to the mission, and that any losses are due to enemy action, not to our own errors, shortcuts or failure to manage risk.

We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous enough; the time to learn to do a job right is before combat starts.

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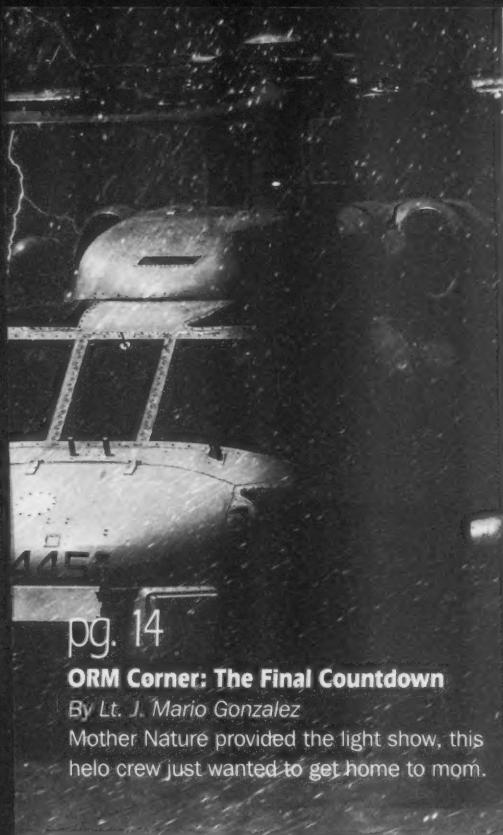
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Our air wing was participating in the U.K.-sponsored Joint Maritime Course (JMC) in the waters north of Scotland. It was June 2001, and this NATO exercise was billed as the best post-cold-war NATO exercise around, offering superlative training in every major warfare area.

Two unforgettable circumstances marked this exercise. The first was that, because of the summer solstice, it never got completely dark (a good news story for me and

Once on deck, we called the carrier and were told she still had VFR conditions. I took a three-potato count and told the DDG to load the passengers. I didn't realize I was rationalizing, but indeed I was. I told myself what I had flown through was a localized fog bank, and I could just pop right back through it under positive control of the DDG and be on my way. My gut was saying something else. Since it was nowhere near chow time, I attributed the uncomfortable feeling in my midriff to

Trust Your Guts

By LCdr. Greg H. Molinari

Photo by Ted Carlson
Composite

the rest of the "O-4 and above" crowd). The second was the miserable weather. While constant fog and rain made the warfare much more challenging, it also made routine business anything but.

I was launched on a VOD mission to a DDG. En route, the visibility began to decrease. As it came down, so did we. At 5 miles from the DDG, we basically were air taxiing our helo toward the ship. However, the ship reported they were 500 overcast, with 2 miles visibility. We requested an SCA (my first actual) and conducted an uneventful approach. Sure enough, at 2.5 DME, the visibility markedly improved.

the fact I was sitting on a surface combatant, and, like Pavlov's dogs, I was expecting to be fed a box lunch.

We launched (minus the box lunches) and punched through the fog bank. However, 10 minutes later, as the distance to mom decreased, so did the weather. In fact, it got ugly faster than it did earlier, and, as I checked in with our tower, I was told they were now in-and-out of 0/0 and to contact approach. Since I was flying with another HAC, we simply cinched down the safety straps and looked at each other with an expression (you in multi-piloted aircraft know what I mean) similar to the anxious look of expected flatulence. As I then turned around and gave our passen-

gers my best John Wayne thumbs-up, I remember thinking, "No sweat, this is like driving into Wisconsin."

We continued, slowly descending below the falling ceiling as we attempted to contact approach, which eventually came up and apologized for not being at the ready. They explained the ongoing RAS between mom and the AOE next door had allowed them to stand down for maintenance. They promptly reported us under positive control and told us to climb to 500 feet.

I no sooner rogered-up and began the climb when my gut had its second moment. I remember feeling dread

...I listened this time and looked up
and saw the fantail of the AOE fill
my windscreens.

as I lost sight of the frothy waters and went popeye at 150 feet. Only five minutes later, while cruising inbound on the assigned radial in the thickest IMC of my career, approach told us they had dropped lock. Moments later, at 4 DME, they declared their gadget bent and asked that I find VFR. Nice joke—if only it had been. I was now at 3 DME and had a moment of panic. I knew mom was unrepping or recently had finished, and I also knew her shotgun CG was close by. That made three ships nearby, and I had a TACAN-lock on only one. At that moment, approach called and asked me to call my position off the CVN. I did and then commenced the most interesting approach of my life. Based on my calls of radial and DME, approach talked me through a "normal approach" pattern, giving ASR calls on final. A nice story if only it had ended there.

At 200 feet and 1.2 DME, I still was popeye and was about to call a missed approach when I looked through my chin bubble and saw the wake of the ship. I called, "Wake in sight," and was cleared to continue the contact approach. This was the first time I had the chance to check my airspeed. I was hot, but, at .8 miles, I had room to decelerate. I slowed the helo, but my gut chirped in for the third time. Fortunately, I listened this time and looked up and saw the fantail of the AOE fill my windscreens. I instantly realized my error; the DME I was reading belonged to the aircraft carrier, but the

wake I was following belonged to the AOE, which was then falling astern of the CVN. The carrier was in the midst of her breakaway maneuver. I banked hard left to avoid the AOE, and, before I could thank my guts for looking up, I was cruising over the CVN's LA from right to left at 40 knots and 20 feet. The two ships disappeared as quickly as they appeared. Since I now had the water clearly in sight, I rapidly put in a quickstop recovery and entered a high hover. My copilot, in the right seat, said he could make out the carrier through the fog 400 yards to starboard. I passed him the controls, and he sidestepped us aboard. As we shutdown and began our quiet acknowledgements of gratitude to the big guy upstairs, my legs began to get wobbly. I could not figure out how this situation had gotten so far and so rapidly out of control.

We debriefed and went down to CATCC. We spoke to our controller, who still had our position's dry erase marks drawn across his screen like a child's connect-the-dots game. We thanked him but wondered how control of the situation had gotten away from all of us.

I could have decided, before we penetrated the fog bank the first time and as we closed the DDG, to abort and return to base. But I was being a team player and elected to proceed.

When the visibility started to decrease and I was instructed to climb, I could have requested to remain special VFR and proceed inbound direct.

Finally, once the gadget went down, I should have slowed down to max-conserve airspeed, giving myself and approach a chance to correct the problem or think of a better alternative than drawing glyphs on the scope.

Approach, on the other hand, could have told us to anchor where we were and had us switch up strike. This would have given us the surface picture, kept us clear of surface contacts, allowed approach time to get their bearings, and made sure their gadget was FMC before initiating my climb.

Regardless, I should have listened to the nagging voice within and slowed down the situation. My desire to be a team player and my predisposition to accept this situation as nothing unusual nearly cost me and others aboard our lives. I have learned my lesson and modified some habits. How? Well, as my father likes to say, "You're only paranoid if you are wrong."

Let me add my professional twist to his adage: "Remember, you always have situational awareness until you suddenly, and abruptly, realize you don't. The bottom line: Trust your guts." 

LCdr. Molinari flies with HS-3.

Learning the Hard Way

By Lt. Melony Lynch

A couple of weeks before an Operation Southern Watch mission, a CAG staff pilot stopped by our ready room to discuss an incident he had regarding bad AOA information and incorrect on-speed indications. The incident occurred during his carrier approach and was caused by a basket slap. I listened intently and thought I would throw his lessons learned

into my Hornet bag of tricks. Unfortunately, I repeated the same mistakes he had made.

I was wingman for a night HVAAP mission in support of a strike into Iraq. My loadout of two sidewinders, one HARM, and one AMRAAM would not allow me to come aboard with much more fuel than our required tank state of 3,500 pounds—to be at max trap on the ball. According to my calculations, I would have 800 pounds over tank state on the ball. Shortly after my launch, I lost my primary fuel and engine-instrument displays. I was able to get the needed information, though, by referencing the correct DDI display.

Our mission ultimately was cancelled, so I returned to the marshal stack for the night recovery.

While holding in marshal, I realized I would have to dump fuel to be at max trap for landing. However, I couldn't get the dump switch to stay on. Since the primary fuel display was inoperative, and my fuel state was below the bingo setting I had set before the failure, the system would not dump. I was under a minute away from pushing on time. I elected to push and contacted my CATCC representative for assistance when level at 1,200 feet. Once level, I forcefully could hold the switch on and dump fuel. I continued to dump as I approached tip-over and finally reached an acceptable fuel state to trap.

When I called the ball, paddles didn't respond. I again called the ball but still got no response. Now what? Am I NORDO? Then, I got cut lights. Does that mean roger ball or add power? I added power and had my first bolter for the night. Because of my low fuel state, the air boss sent me to the tanker. At least I wasn't NORDO. I got gas and made another approach. This time, I got a foul-deck waveoff. Ugghhh! Back to the tanker once again.

Frustrated and wanting to be on deck. I rendezvoused on the tanker and made a quick stab at the basket. In my haste, I caught the outer edge with the refueling probe and sent the basket rolling around the right side of the aircraft's nose. I backed away

and made another stab. On this attempt, I got in and uttered those embarrassing words, "Three one two is plugged and receiving." After getting gas for the second time that night, I was ready for my third attempt at getting aboard. I contacted approach, and they gave me a short hook to final. I hastily dirtied up and descended from 1,200 feet.

As I flew the ACLS needles, I got a nagging sensation that something wasn't right. My aircraft felt sluggish, and I was peering over the aircraft nose to see the ball. I quickly scanned my instruments, and everything appeared to be OK, but something still didn't seem right. I wondered for a moment if the glide slope was set steeper than normal. Shortly after calling the ball, I began to settle and started to see a low ball on the lens.

Paddles called, "Power." I responded with too much power and bolted once again. I experi-

Unfortunately, I repeated the same mistakes he had made.

enced a huge settle at the end of the landing area when I rotated to on-speed. Even though it was dark, there was enough moonlight to see I was settling toward the water. This scared me, and my survival instincts kicked in. I selected afterburner and heard the air boss screaming over the radio,

"Three one two. Climb! Climb!"

Shaken a bit and finally at a comfortable altitude above the flight deck, I said with a not-so-steady voice, "I need to speak to my CATCC rep." Before proceeding to the tanker for the third time, I told my rep I had a large settle after bolterizing. Something seemed wrong with the aircraft, and it didn't feel like it was flying correctly. My rep told me to check my engine instruments and my flight-control page to see if there were any Xs or flight-control BLINs. Everything was fine. Was I imagining things?

My rep then advised me, "Fly a good approach and keep the ball on the happy side." Even though it wasn't said, I think everyone knew I was having difficulty getting aboard, and I just was getting fatigued. After all, I had made three attempts to come aboard and now was on my third tanking evolution, as well.

Once again, I got gas and planned on doing my best to get on deck. I didn't get a short hook to final like my last pass, so this time I didn't feel rushed to dirty up and do too many things at once. As I did my landing checklist, I realized my on-speed indication was several knots slow. I couldn't recall what it was on my last approach. Did I even do one on my last approach? On my auxiliary radio, I passed to my rep my AOA on-speed indication was 136 knots. He agreed it was a little slow, but everything should be OK, and he told me to continue and fly a good pass.

Before reaching 1.5 miles from the boat, paddles called contact and talked me aboard. Apparently, they wanted me to land as badly as I wanted to, and they were not going to take any chances on my bolterizing again. I grabbed the ace, but it didn't matter to me because I was happy to be on deck.

I still felt I hadn't imagined things and checked my AOA probe on postflight. I had done

some damage while tanking. The right AOA probe clearly was bent. Things made a little more sense. Now that I was on deck, I thought more clearly. I don't know why I hadn't thought about my AOA probe being damaged airborne. Perhaps, it was a result of fatigue and feeling some urgency to get on deck. Had I not felt so rushed on the pass before my frightening settle—which aircraft data later showed had been to 32 feet—I would have done a proper landing checklist and discovered my on-speed indication was reading slow, as well. I now knew, not only was I a little slow during my approach, but I was seven knots slow. This explained why something just didn't feel right and why I was peering up over the nose of my aircraft to see the ball.

There were several lessons learned. First, I started with a minor problem: I couldn't dump fuel. Instead of troubleshooting the problem at low altitude at night while flying an approach, I should have told marshal I couldn't make my approach time. I wouldn't have been rushed. I could have prevented a long and painful night recovery if I had flown a good pass the first time.

Second, no matter how rushed one may feel, there is always time for a full landing checklist. Had I done mine each time, I would have discovered my on-speed indication was wrong earlier and could have handled things differently.

Last, I learned to trust my instincts. If you think something is wrong, it probably is. I didn't think my airplane was flying correctly. If I had thought more about it, I would have remembered I had experienced a basket slap during tanking. After all, it was only a few weeks earlier that a pilot in my ready room had been relaying a very similar situation. Instead of learning from his mistakes, I unfortunately had to learn the hard way—I, too, got to stand in front of my peers and tell the same story. ☺

Lt. Lynch flies with VFA-15

In the Blink of an Eye

By Lt. Todd Endicott

"B

eefsteak, Claw, I'm heading to marshal."

"Roger, Claw."

Although these comms appear routine, they were preceded by a harrowing episode; a near mid-air overhead a carrier in the South Pacific between our EA-6B Prowler and an S-3B tanker. Our spring deployment was well underway, and my crew was pulling yet another night flight.

The evening was cloudless, dark, and no moon. I was flying in the front right seat for a night suppression of enemy-air-defenses (SEAD) mission. Feeling comfortable with night ops, we decided to grab a few routine practice plugs at the end of our cycle. Before our launch, we had coordinated with a double-cycle tanker to meet us overhead the carrier.

Our mission complete, we contacted the tanker and agreed to meet at Angels 8. We proceeded inbound at Angels 7.5 and, once established, began slowing to 250 knots. My pilot set a 30-degree, angle-of-bank left turn to establish the rendezvous. Based on air-wing-tanking procedures, we planned to remain at Angels 7.5 until we had the tanker in sight. Looking right to clear the belly, I spotted an anti-collision light at 2 o'clock, but I couldn't determine its aspect. I called traffic to the crew, but my pilot and ECMO 2 [right side, aft cockpit] couldn't see the aircraft because of our angle of bank and the thick Grumman Ironwork's canopy bow.

I looked back in the cockpit as I felt my aircraft's nose rise. The jet ballooned through 8,300

feet as we slowed. My pilot worked to correct the trim settings. Seeing him make corrections to return to our briefed altitude, I resumed lookout to the right. By this time, the anti-collision light I had seen was transformed into a shocking sight. Our lower anti-collision light illuminated the entire top wing of an S-3 as it passed below us. I didn't have a chance to make a directive call before my pilot asked, "What was that?" as we listened to the distinctive sound of a Hoover pass below us.

"Our tanker," I replied, with a lump in my throat. The cockpit was very quiet for the next few moments. We told the tanker we were heading to marshal.

After landing, the S-3 pilot paid a visit to our ready room. He and his Viking had arrived overhead at Angels 8. His first sight of us was when he read the serial number from our centerline drop tank! He pushed 40 degrees, nose low and recovered at 3,000 feet. His copilot never saw us. In the ready room, we discussed our mistakes, thanked the powers-that-be for saving us, then headed to mid-rats.

Lt. Endicott flies with VAQ-136.

Analyst note: There has been a substantial increase over the years in aircrew-skill-based errors and mishaps, particularly in basic flying skills like instrument scan. This article makes a great point about how a simple breakdown in one of these fundamental skills can be very unforgiving. Your basic flying skills always need to be there and will be tested when you least expect it. Stay sharp. Cdr. Buzz Bauers is the aircraft operations division officer, Naval Safety Center.

The Best o

By LCdr. Wes Bannister

Following one-and-a-half months of events in support of Operation Noble Eagle, I was up for a BITS (back in the saddle) hop following the Thanksgiving holiday downtime. My crew consisted of a lieutenant starting his last year at the command as aircraft commander, a lieutenant junior grade on his first mission commander hop, another department head, and our CAG chaplain. Our planned timeline was a 2200 brief, assume an alert-30 posture until our midnight walk-time, launch from Norfolk Chambers Field at 0100, maintain station and surveillance for three hours, and finally recover at 0500 at Norfolk.

The already-airborne crew wanted us to launch a few minutes early to provide a PIREP for their recovery. I started to flight plan about 45 minutes before the brief time and I collected TAFs for every military divert on the East Coast, from southern New York to North Carolina and as far west as Ohio. The news wasn't good. For the first time in my operational experience flying from ashore, I was faced with 100-foot ceilings at and visibilities measured in fractions of a mile.

For over an hour and a half, my copilot and I mulled options for our destination and an alternate. We kept sliding our brief time. With noth-

ing working out because of forecasted weather, we decided to cancel. We cut the chaplain loose and, in doing so, probably took our first step toward a downward spiral. The duty officer's phone call to NORAD to launch an AWACS alert, to cover our surveillance period, was fruitless. Not only was Tinker AFB suffering from its own weather woes, an AWACS bird wasn't ready to swing into gear.

Forty-five minutes after our original brief time and still more than two hours before launch, the aircraft commander said what we were thinking, "There has to be a destination that will allow us to fly." Syracuse Hancock International was 371 miles due north of Norfolk and was forecasted VFR at our proposed recovery time. It was within reach as a destination following the nearly four-hour mission. Since it required no alternate, it was a godsend, or so we thought.

Two hours before takeoff, we were back on a typical briefing timeline, except we also were into our alert-30 window. We honestly were not capable of meeting the requirements of such a posture. Minutes following the brief, we were pressed into our alert responsibilities since our airborne crew now was without radar and returning to base. Regardless of our capabili-

Attention!

We were one mile inside the IAF and established on the approach when ATC reported the ceiling had fallen below mins.



ties, we had decided to fly, and we needed to press hard to launch.

We were airborne by 0035 and responding to the alert call. The flight was uneventful, but we were doing everything we could to remain attentive. During the last hour of our coverage time, NORAD asked how long we could remain on station. The need for this extension was obvious. The Tinker weather forecast called for eight

inches to a foot of snow during a 24-hour period and we already were four hours into it. We reluctantly allotted an extra 15 minutes but realized this wasn't the miracle NORAD had hoped for.

Having half an hour left to remain on station, my copilot requested weather for Syracuse International. The airport was above minimums but not VFR. OK, so we would have a little harder time locating the field than we initially thought.

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The Best o

By LCdr. Wes Bannister

Following one-and-a-half months of events in support of Operation Noble Eagle, I was up for a BITS (back in the saddle) hop following the Thanksgiving holiday downtime. My crew consisted of a lieutenant starting his last year at the command as aircraft commander, a lieutenant junior grade on his first mission commander hop, another department head, and our CAG chaplain. Our planned timeline was a 2200 brief, assume an alert-30 posture until our midnight walk-time, launch from Norfolk Chambers Field at 0100, maintain station and surveillance for three hours, and finally recover at 0500 at Norfolk.

The already-airborne crew wanted us to launch a few minutes early to provide a PIREP for their recovery. I started to flight plan about 45 minutes before the brief time and I collected TAFs for every military divert on the East Coast, from southern New York to North Carolina and as far west as Ohio. The news wasn't good. For the first time in my operational experience flying from ashore, I was faced with 100-foot ceilings at and visibilities measured in fractions of a mile.

For over an hour and a half, my copilot and I mulled options for our destination and an alternate. We kept sliding our brief time. With noth-

ing working out because of forecasted weather, we decided to cancel. We cut the chaplain loose and, in doing so, probably took our first step toward a downward spiral. The duty officer's phone call to NORAD to launch an AWACS alert, to cover our surveillance period, was fruitless. Not only was Tinker AFB suffering from its own weather woes, an AWACS bird wasn't ready to swing into gear.

Forty-five minutes after our original brief time and still more than two hours before launch, the aircraft commander said what we were thinking, "There has to be a destination that will allow us to fly." Syracuse Hancock International was 371 miles due north of Norfolk and was forecasted VFR at our proposed recovery time. It was within reach as a destination following the nearly four-hour mission. Since it required no alternate, it was a godsend, or so we thought.

Two hours before takeoff, we were back on a typical briefing timeline, except we also were into our alert-30 window. We honestly were not capable of meeting the requirements of such a posture. Minutes following the brief, we were pressed into our alert responsibilities since our airborne crew now was without radar and returning to base. Regardless of our capabili-

Intentions

We were one mile from the line and established on the approach when ATC reported the ceiling Tinker below mins.



ties, we had decided to fly, and we needed to press hard to launch.

We were airborne by 0035 and responding to the alert call. The flight was uneventful, but we were doing everything we could to remain attentive. During the last hour of our coverage time, NORAD asked how long we could remain on station. The need for this extension was obvious. The Tinker weather forecast called for eight

inches to a foot of snow during a 24-hour period and we already were four hours into it. We reluctantly allotted an extra 15 minutes but realized this wasn't the miracle NORAD had hoped for.

Having half an hour left to remain on station, my copilot requested weather for Syracuse International. The airport was above minimums but not VFR. OK, so we would have a little harder time locating the field than we initially thought.

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Los Angeles

Anticipating an engine failure,
we kept the jet high and fast,
and we aimed for the last inch
of pavement.

*By Capts. David Fairleigh and
William Cupples, USMC*

There were no flashing-red lights, aural warnings, cautions, or advisories to let us know we had four-and-a-half minutes of flight time remaining before we had to eject and send an FA-18D to the bottom of the Pacific.

Only by serendipity were there no stormy-dark skies, rolling seas, or big boats involved. In the left AIM bay, unknown to us, a separated fuel line was pumping 1,200 pounds of fuel per minute out of our aircraft into the atmosphere. The next three minutes would prove to be the most intense and anxious of our lives.

After an unscheduled three-day stay at NAS Lemoore, Calif., we were ready to return home to MCAS Miramar, a 25-minute flight. We left on a clear Sunday afternoon with 13,100 pounds of fuel and enjoyed an unrestricted-afterburner climb to FL270. Over Los Angeles International

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Photo by Matthew J. Thomas

Airport, we turned south for Miramar with 9,200 pounds remaining and reset the bingo bug to 5,000 pounds.

We descended out of FL270, and, leveling at FL240, an ICS call came from the front seat, "Dudley, we have a serious @#&%*! problem here." The fuel indicator on the IFEI panel was ticking off at a rate of 20 pounds per second. Three minutes before, we had 9,200 pounds, and now we were showing only 5,200 pounds.

While the Hornet is often the butt of many jokes about gas, this was not the least bit normal or funny. The severity of the situation was instantly apparent, and it became obvious it was not an instrumentation problem. We were in a race against time and had not heard the starting gun. After declaring an emergency with LA Center, we informed them of the massive fuel leak and continued our descent.

We decided in two, quick, ICS bursts we could not make Miramar and would need to divert. Our request for an immediate landing at El Toro was met with a "standby" from Center. We were five miles south of El Toro and could look over and see the field. Moments later, Center came back and denied our request; we were quickly running out of choices and time, and we suddenly found ourselves in a very small box. Communication with Center was difficult because of competing comm calls. We didn't have time to argue, and we continued south, as fast as the Hornet would take us. Marching toward us on the moving map was a rough rectangle restricted area over Camp Pendleton, a scarce 23 miles away. It was going to be there or the ocean.

Concurrently, we tried to find the source of the fuel leak to stem the flow, if possible. Following the emergency procedure steps for fuselage-fuel leak, we checked the fuel sub-page but were unable to discern if it was the left- or the right-engine feed. If we had made this determination, we would have been able to press the appropriate fire light and possibly stop the leak. However, if we pressed the wrong fire light, we would complicate the problem and most likely have a dual-engine failure.

After looking at the fuel page, I grabbed the towel rack in the aft cockpit and cranked myself around to look between the tails. Streaming behind

us was a 10-foot-wide swath of thick, white vapor.

With the restricted area on the nose, we told LA Center we no longer could comply with any altitude or heading restrictions, and we were going to land at Camp Pendleton. With the throttles at mil, we continued descending. Center responded with a frequency change and told us to maintain FL190. Ignoring Center and searching desperately for the airfield, we switched to Pendleton tower frequency and called. No answer: The field was closed.

With the incessant chatter of Center frequency gone, things became quiet as fuel continued to pour out of the aircraft. Over the ICS came another, and at the time not surprising, call from the front, "Dudley, we might have to eject."

As we talked later, both of us had looked down quizzically and briefly contemplated whether we should remove our kneeboards in anticipation of ejection or wait a few more seconds. Suddenly, I realized I really didn't want to have to explain to my new skipper how we lost one of his Hornets on a standard-instrument flight.

Camp Pendleton is rarely, if ever, briefed as a divert. With only 6,000 feet of runway and no arresting gear, it is at best a piece of concrete but exactly what we needed at that moment. Spotting the field nestled in a valley, we set up for a four-to-five-mile base leg, doing about 450 knots, at 8,000 feet. An idle-power hard-turn-in set us up for what looked like a 15-degree-dive-bombing pattern to the end of the field. At three miles, we still were doing 270 knots, so a quick S-turn bled us to gear speed as we rolled back out on centerline at two miles.

Anticipating an engine failure, we kept the jet high and fast, and we aimed for the last inch of pavement. At 1.5 miles, a master-caution tone alerted us to our left display, which suddenly showed every caution from the left engine that normally appears on shutdown. The extra speed and altitude allowed a near idle-power setting all the way to touchdown. The effects of the momentary left-engine failure did not affect the flying characteristics. At one mile, we started to slow, and we trimmed the jet for landing. A quick fuel check just before landing showed 1,500 pounds. With our consumption rate and leak, that amounted to about one minute of remaining flight time.

ORM Corner

THE FINAL COUNTDOWN

By Lt. J. Mario Gonzalez

We all walked away, and the helo flew again, but not because we were the best pilots ever to walk the face of the earth, nor because we planned for every contingency. We looked back and chalked it up to something greater than luck; maybe God just smiled down on us despite the situation into which we had gotten ourselves.

ORM Corner

Please send your questions, comments or recommendations to Ted Wiggins or to Capt. Denis M. Faherty, Director Operational Risk Management.

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It was week one of a standard work-up for our HSL detachment onboard a Norfolk DDG. The ship had left port and headed south to conduct exercises in the Puerto Rican Op Area. One morning, early in the exercise, we were called to combat and told our scheduled day-proficiency flight was changed to a pax transfer of an emergency-leave case from a sister ship.

We said, "No problem," and then told the key folks, split planning responsibilities, and shortly were ready to go. We were 250 miles south-southeast of West Palm Beach and 200 miles offshore. We also were tasked to bring back our work-up advisor from week one. Our emergency-leave case was on a DDG about 70 miles away. We decided to use the DDG as a lily pad for fuel, since they were about 150 miles from land. The weather was reported as VMC with ceilings at 3,000 feet, so we planned on a final stop at Mayport. To prepare for our return, the DDG was to remain 150 miles abeam of West Palm Beach to fuel us. Our mother (DDG) was to continue south toward the op area and not to exceed 150 miles from our lily pad.

Just when everything seemed like it would go our way, we faced a 180-degree turn of events. We made it to the DDG and picked up the passenger but had difficulty taking on fuel. The pump room couldn't raise enough pressure, and we burned fuel as fast as we took it on. Finally, the boys in purple got the system running 4.0, and we launched after almost an hour on deck.

To make up for lost time, we decided to take the straight shot to Mayport, instead of completing the other two sides of the triangle: West Palm and then to Mayport. We had the fuel, good weather, and a good datalink with our controlling ship. As the distance from our ship opened, we climbed to maintain comms and navigational aids. We soon were in the goo but still had the warm fuzzy of good comms with mother. We finally picked up

land-based TACANs and proceeded to our destination. We broke out of the goo 20 miles south of Mayport and continued in VMC.

By the time we planned for the return, took care of our pax, fueled and headed back, we were well into the afternoon. We flew IFR to West Palm and got gas just in case our luck continued the way it had been all morning. We encountered yet another delay getting fuel and phoned the ships to tell them. We took off, proceeded high into the goo, and headed to our planned fuel rendezvous with the DDG.

Bingo fuel now was our highest priority. We flew on, talked to no one, and approached the point of no return. Tension rose as we continued to call over datalink and the radios, getting no answer. Shortly before reaching our bingo, the DDG answered over VHF. They had turned off their datalink and TACAN but had a good radar paint on us. They brought up all their equipment, set a green deck, and we raced in for fuel. Night was fast approaching. On deck, the grapes were having the same pumping problem as before. We watched the sun set, and night was upon us. We knew then mother was heading south and getting farther away every second. An hour later, we had a full tank of gas, and we blazed our way south at max-range airspeed with all eyes on the fuel gauge and on the clock.

The ceiling was solid at 1,000 feet, and we opted to stay below it in VMC. We pressed on into the darkness toward yet another bingo, all the while staring at an empty radar screen.

In the distance, we could see the sky illuminate with the brilliance of lightning, but we were too low to break out anything on the scopes. We had a moment of levity when our crewman said, "Wouldn't it be great if mom was in the middle of some huge thunderstorm?" We laughed and reassured him our aviation counterparts would take care of situations like that and steer mom

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away from hazardous conditions. A short time later, that guy "Murphy" came to the cockpit and slapped us around a little bit.

As we rapidly approached bingo, we got comms over link with mother. They were setting flight quarters and were waiting to take us in. We passed our bingo and headed toward mom—over 90 miles away. Shortly later, the ASTAC told us they were having a major engineering casualty. They had to stop one shaft and were limited to eight knots but still were maneuverable and could land us. We realized we couldn't make it back to

We dropped our gear and ran inside for cover.

the beach. We had a slim chance of finding the DDG we had left over an hour ago, since it was heading back to Norfolk at liberty speed. We knew mom was our only hope.

The light show was getting extremely close and was in mother's direction. The storm appeared on the radar about 10 miles away from mom, heading toward the ship at 30 mph—there was no outrunning this one. It was a frightening sight: We didn't have enough fuel to fly around it, we couldn't beat it to mother, and mom couldn't outrun it. We were going to go head-to-head with nature. Everyone in the helo thought the same thing, but it was the crewman that finally said it aloud, "Oh, this ...!"

When we were within 30 miles of mom, the lightning was striking every few seconds. Our LSO came on the radio and told us conditions there were not ideal. By now, the leading edge of the storm was walloping mom.

Even though we dreaded the answer, we finally asked the LSO, "Are you guys getting hit with this storm?"

He replied, "Have you ever seen that movie, The Final Countdown?"

After those "calming" words, we prepared for landing, and we desperately searched for a way through the soup. Our crewman spotted what appeared to be a thin spot on the radar. We pulled torque and accelerated toward what seemed our one and only chance of penetrating the fury.

The wind, turbulence and rain, not to mention the lightning striking everywhere, made

it difficult to fly the aircraft. As we punched through the lightest part of the storm, we saw mother's lights in the distance. It looked as though the rain was tapering in a perfect corridor, leading us home.

As we approached the ship, the calm passed, and the storm kicked up again. My copilot talked me through the approach, and the crewman made closure calls. We crossed the missile deck and set down the aircraft in the trap.

Being on deck offered a wonderful sense of security, but we weren't out of the woods yet. We quickly shut down, and our first priority was to straighten the aircraft and get it in the hangar. The LSO maneuvered the aircraft, and we stood by anxiously waiting to fold the tail. The storm blew at full force, and the lightning was getting closer. As we ran out to fold the tail, the lightning seemed to be drawn to the ship. We dropped our gear and ran inside for cover. When the last man had run through the door, we slammed it. We stood there soaked to the bone and traded a few choice expletives. All of a sudden, wham! A lightning bolt of seemingly monstrous proportions struck just outside the hangar door. We thought it slammed into the flight deck, but no one was about to check.

We stepped back from the door and retreated farther into the skin of the ship until the storm subsided. When it was clear, the maintenance crew finished the traversing evolution. Once inside, we saw the aircraft apparently had been on the receiving end of that ferocious lightning bolt that had sent us running. Everyone was at a loss for words. We knew only moments had separated our safety from a ringside seat for that last lightning blast. We realized we had escaped death or severe injury.

As a naval officer and pilot, I pride myself on being good at my job. That night taught me a valuable lesson. Piloting is not only about flying skills. Planning and ongoing ORM will keep you out of most hairy situations. That day and night, we decided to keep pushing toward our goal, and it almost killed us. There are just some things in this world you don't mess with. No pilot is a match for Mother Nature, and any pilot or crew member can, and should, pull the plug when things have the potential to get too dicey. 

Lt. Gonzalez flies with HSL-44 Det 5.

Fast Hands in the Cockpit

By Ltjg. Scott Meairs

The day for me to solo was here at last. I had made it through FAMs and was ready to take off and return unassisted in the T-34 Mentor. The ODO instructed me to bounce at our home field and then go to the working areas to enjoy some time on my own. After doing the touch-and-goes, I raised the gear handle, along with the flaps, and climbed out toward the beach.

A bright-red wheels light lit up the cockpit, and the gear horn went off. My gear indicated three up and locked. A quick glance at the flaps showed me the problem; my gear was up, but my flaps still were down. I reached down to raise the flap handle—surprised at myself for not doing it in the first place. I was more surprised to find I indeed had raised the flap handle.

I started to accelerate and had to bring the power back so I wouldn't overspeed the flaps. It must be flap circuit breakers, I thought. Quickly reaching back to push them in, I was puzzled to find that the breakers were in place. I cycled the flap handle twice more to get a response. To my relief, they came up as advertised. Now I was ready to enjoy some quality solo time.

I checked in with Corpus departure and told them I would be climbing to take one of the working areas. Their response was not what I expected. Departure said they could not find my transponder and suggested I cycle it in case it was left in standby. How could I be making all these simple mistakes on a seemingly routine flight? There was no screaming instructor trying to rattle me.

I reached down to turn the knob on the transponder and was surprised, yet again, to find there was no power to it. A quick scan of the instrument panel shocked me even further. I was reading empty gas in both tanks. Since I had gas a minute ago at departure, I thought there was

an electrical problem. The circuit breakers must have popped, so I looked back to see which ones they were. Again, no breakers were popped. I decided it would be in my best interest to return to base and ask someone for help.

On my way back, I switched to base frequency and explained my problem. Their first response was a no-brainer. They asked me to check my circuit breakers and reset any that had popped. Already having done that, I decided to humor them and give the breaker panel a quick scan. I radioed back that no breakers were popped.

Again they told me to give it a quick look. This time, I saw the cause of all my troubles: A utility bus switch was in the off position. I flipped it on, and the cockpit finally appeared normal. I sucked it up and told them the problem and that now all was right with the aircraft. After what seemed like an hour of debate among instructors, I was told to come in for another touch-and-go and depart as normal.

"Could I have forgotten to check the switch in preflight?" I wondered. No, all was normal during pretaxi checks, as well as during my first bounces. Once up at altitude, I reached back to try and simulate how I could have flipped the switch off by mistake. Sure enough, the cuff on the sleeve of my flight suit caught the switch and pulled it off—something I would not have noticed in my haste to reset the breakers during my original flap problem.

The flap situation was determined to be a sticky internal switch, which was out of my control. But the bus switch being off was the result of my actions. During the crew briefs, I always had briefed, "No fast hands in the cockpit." That day, I learned that statement also applies to a crew of one. 

Ltjg. Meairs currently flies with HS-6.



Photo by Scott Meairs

I've reflected on the various, though infrequent, errors I have made as a naval aviator. A four-letter expletive followed when my kneeboard card blew out the window. I also declared minimum fuel with a 3,000-pound-external load, rather than put down at a nearby military facility and return to base clean. None of my mistakes killed me, but many could have.

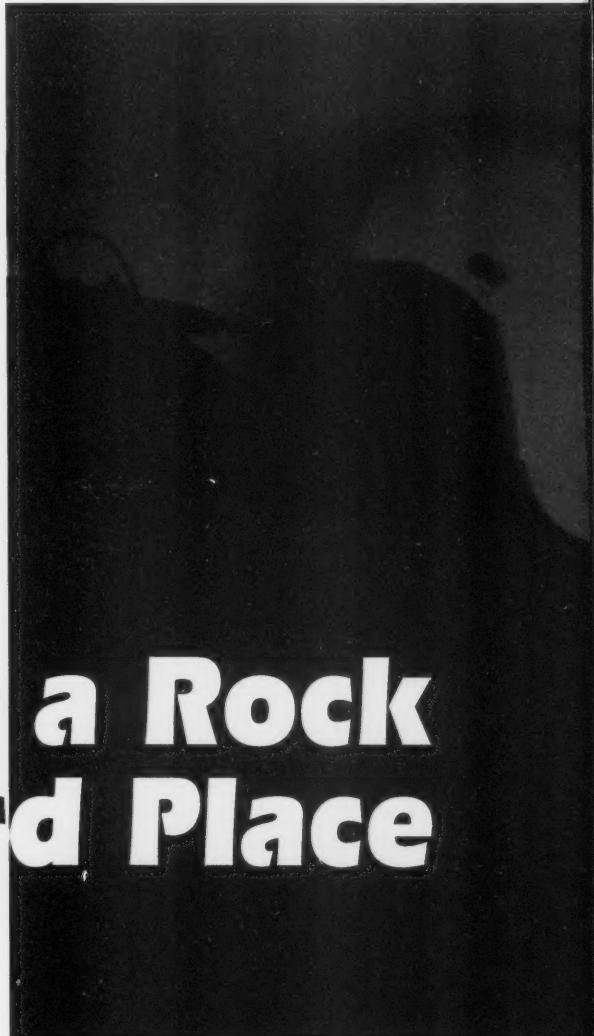
As the oncoming UH-3H SAR-alert crew at our Caribbean island base, we were scheduled for the weekly, night-SAR-proficiency flight. Thrown into the mix was a VNAV-orientation flight to a small island in the Puerto Rican Op Area.

It was a great night to fly: a nearly-full moon, a few scattered clouds, an FMC aircraft, and the crew felt good. Even the SDO was having a good night. I covered the SOE for the flight, down to each individual landing. Since I had not flown at night for several weeks, I decided to spend a few minutes in the pattern before beginning the night VNAV. I asked the SDO to notify the watch-stander we would be at the observation post, the final point of our VNAV, in 15 to 20 minutes. You'll see why later.

I programmed the waypoints into the TACNAV, and soon we were feet-wet. The objective was to pick up visual-reference marks as

Between a Rock and a Hard Place

By Lt. Tariq Rashid



we went feet-dry and transition to a paved-expeditionary runway on the southern side of the island. We had all the external lights blazing and made an uneventful landing. After a couple more bounces, we departed and transited along the southern shore to pick up the next landing spot, which was a large, hard-packed dirt pad astride a road that led from the shore. I knew it was suitable since I had landed at this pad the day before. It was about four-to-five-aircraft-lengths long with a similar width. It had almost no grade, except in the upwind 20 percent. It was surrounded by gentle, shallow rises, ranging from 50 to 100 feet MSL high. The full moon allowed us

to easily spot the road. We started our ingress at 300 feet MSL.

We circled the pad and used the searchlight to evaluate it. Our comfort level was high, so we decided to do one landing and then continue to the next landing spot, a large concrete pad atop a 480-foot pinnacle. The high ambient-light level seemed to make our searchlight redundant.

There had been very little dust when I landed the previous day. Since the environmental conditions hadn't changed, I was surprised to see the moderate cloud we kicked up on our landing. Even a little dust seems like a lot when the light is reflected from a 450-watt searchlight and four



Photo by Matthew J. Thomas. Modified

floodlights. A full moon and a searchlight are great, but they are not daylight.

A UH-3H standard-NATOPS takeoff is to lift into a 15-foot hover, stop and stabilize, add 15 percent additional torque, lower the nose, and accelerate on climb out. It wouldn't make sense to sit in a hover after takeoff and risk brownout. Having noted hover power at 75 percent from our previous takeoff, I decided to do a "no hover takeoff." I would pull smoothly to 90-percent torque and transition forward as the aircraft passed vertically through 10 feet. I instructed the copilot to monitor the gauges and engine-power-control levers.

After a smooth increase in power, we lifted from the deck and transitioned. As we accelerated to 10 knots, I heard one of those sounds you never hope to hear—the sound of one engine spooling-up to compensate for its twin, which has decided to stop.

A quick glance showed one torque needle well above 100 percent, while the other pointed in the opposite direction. My initial thought was torque split. The H-3 is not equipped with automatic load-sharing. This function is accomplished through speed-selector positioning. This causes an occasional torque split under high-demand conditions. I called, "Match torques. Match torques," while my eyes went back outside. At the same instant, I felt the aircraft settle. I had no choice but to flare and stop our forward motion. The alternative was having the chin dig into the rise at the end of the LZ.

Every helicopter pilot knows hard landings with aft stick can result in bad things. Normally, a helicopter rotates around the CG, and, since the rotor mast is in line with the CG, you have to be creative to hit yourself with the rotor in-flight. However, if the tail wheel is in contact with the ground, the aircraft rotates about the tail wheel while the rotor disk still tilts about the rotor mast. As the helicopter pitches down, it can rotate the tail boom up into the rotor disk, which is still tilted aft. Ground contact actually surprised me, and I quickly neutralized the cyclic and bottomed the collective—not sure if we were on a side slope.

With the parking brake on, the aircraft slid forward a few feet. We quickly pulled off the engines and got the rotor brake on. I jumped on the radio while the crew chief and copilot got out to look at the aircraft. What had seemed like a relatively comfortable landing had chopped through the last section of tail-rotor-drive shaft. Pieces of it were strewn all over the LZ.

We tried every radio and every frequency we could think of, even going to nearby hilltops with PRC-90s. There we were, less than five miles from the observation post and less than 10 miles from our home field, and no one could hear us. At least, no one was listening.

If you have to ditch, or do a PEL, or land anywhere out of radio LOS, tell someone before you get down low. It would be ridiculous to do an intentional ditch and forget the mayday call until you are too low for it to do any good.

Finally, the observation post came back on one of the PRC-90s. It turned out that our SDO had called him when we were overdue for our ops-normal report. We soon had a truck pick us up for a night's stay on a tropical island, followed by a non-stop flight to the hospital to begin the dreaded post-mishap process.

Make those ops-normal reports; don't treat them as an admin hassle. Make them detailed, and include intentions or changes of status. Injuries could've meant the difference between life and death.

Could I have done anything differently? I should have stabilized in a hover before transition. The failure might have been delayed until the power pull or an even more precarious position like an overwater hover. I had to balance that with the risk of brownout at night, which, at the time, I assessed to be the greatest hazard. The irony of it all is even when we think we're doing everything right, we still are not bulletproof. We get better by learning from our mistakes and those of others, admitting that we are not flawless and avoiding unrecoverable situations. These are the things we can control, but there is always the unexpected, and that requires our greatest preparation. 

Lt. Rashid flies with HSL-48.

At 0435, we were relieved of station and headed to Syracuse. ATIS reported IFR conditions at 1,000 feet and one and a half miles. By the time we reached the IAF, the ceiling had decreased to the 500-foot minimums. Approach questioned our intentions. With decent visibility and ceilings at mins, we intended to fly the approach and land—what else after being strapped to a Hawk-eye seat for nearly four hours?

We were one mile inside the IAF and established on the approach when ATC reported the ceiling had fallen below mins. Our intentions? Continue, of course—we had nowhere else to go! With ATC's voice continuing to ring in our cockpit, the weight of hours on-station and the need for rest made my first approach anything but stellar. The straight-in TACAN approach was uneventful, with one minor exception; the NAVAID was displaced from the field by five nautical miles. This approach might have stumped a primary student at Whiting Field, but, at that moment, it also held two cruise-experienced aviators, with over 3,000-cumulative hours, at bay.

Before I knew it, I was at the MAP, miles before I expected it and 200 feet high. Why? Thanks to less-than-adequate instrument lighting, I barely could read my BDHI compass card and couldn't see the DME. Confidence in our INS was low because the bearing-range readings did not coincide with rational thought or our TACAN reading. I had little to fall back on for my distance from the NAVAID and, more importantly, the distance to the airfield.

I felt like a student in the simulator on an instrument-check ride; I had minor navigation errors introduced to sidetrack my attention, a controller making remarks that made my brain spin, and rapidly changing weather, forcing decision-making to be an ongoing process. Through our troubleshooting of the INS, mental calculations of the decreasing weather minimums and listening to approach bark at us, the concept that the NAVAID and the field were not colocated completely dropped from my scan. And there at the MAP, approach has nothing better to do than ask what our intentions are since we are "overhead the field!" What? Sure

enough, below us was a perfectly good runway, actually two! We pulled off power in an attempt to circle and land. I realized two things: The reported weather was not what I observed at the field, and I was inside the MAP with nothing left to do but wave off. Frustrated, I executed a missed approach and requested a refresh of missed-approach heading and altitude. As we climbed, approach again asked our intentions. The copilot passed a PIREP at the MAP and over the field to approach and told them we would make a second attempt. We had run out of options.

We decided what we needed to get the aircraft on deck, and we began our second approach. I was amazed at how well the approach went when I followed the published procedures. We broke out at 900 feet (with an 880-foot MDA) and had the runway environment in sight at three miles. I was thankful the air below the cloud layer was as clear as it was when compared to the haze we had wallowed in above the layer. The landing was followed by a typical cross-country turnaround.

Our mission ending was nothing short of an attention-grabbing experience—like being at the boat! I took away several learning points:

- Proper rest before any event can't be overemphasized.
- Be careful how far you push to maintain your Navy pride; press to get the mission done.
- Optimize all weather-observation sources. Frequent chats with a metro station would have increased our situational awareness of weather changes at Syracuse Hancock International.
- Do your homework. We didn't fully review the approach and airfield, and you read what happened.
- Make a decision. Once we were cancelled, I Monday-morning-quarterbacked whether we should have reconsidered. When an option for a suitable field arose, we took it. Should we have changed our decision?
- If you have a chaplain scheduled with you, keep him with you until all the paperwork is done. 

LCdr. Bannister flies with VAW-126.

Truisms

By Jack Stewart

The December 2001 issue of *Approach* had an article by Lt. Richard Klauer titled, "(Almost) Everything I Ever Needed to Know I Learned in Primary." Lt. Klauer described the many truisms and adages of flying that his instructor had passed along to him.

He shared a story about the time when his instructor once (maybe more than once) asked, "Have you even read your NATOPS?" Years later, Lt. Klauer reflected on his instructor's question and writes, "Despite his criticism of my systems knowledge, I really did read my NATOPS. Now that your fleet aircraft NATOPS is about four times as thick as the T-34s, there is plenty of reading to do."

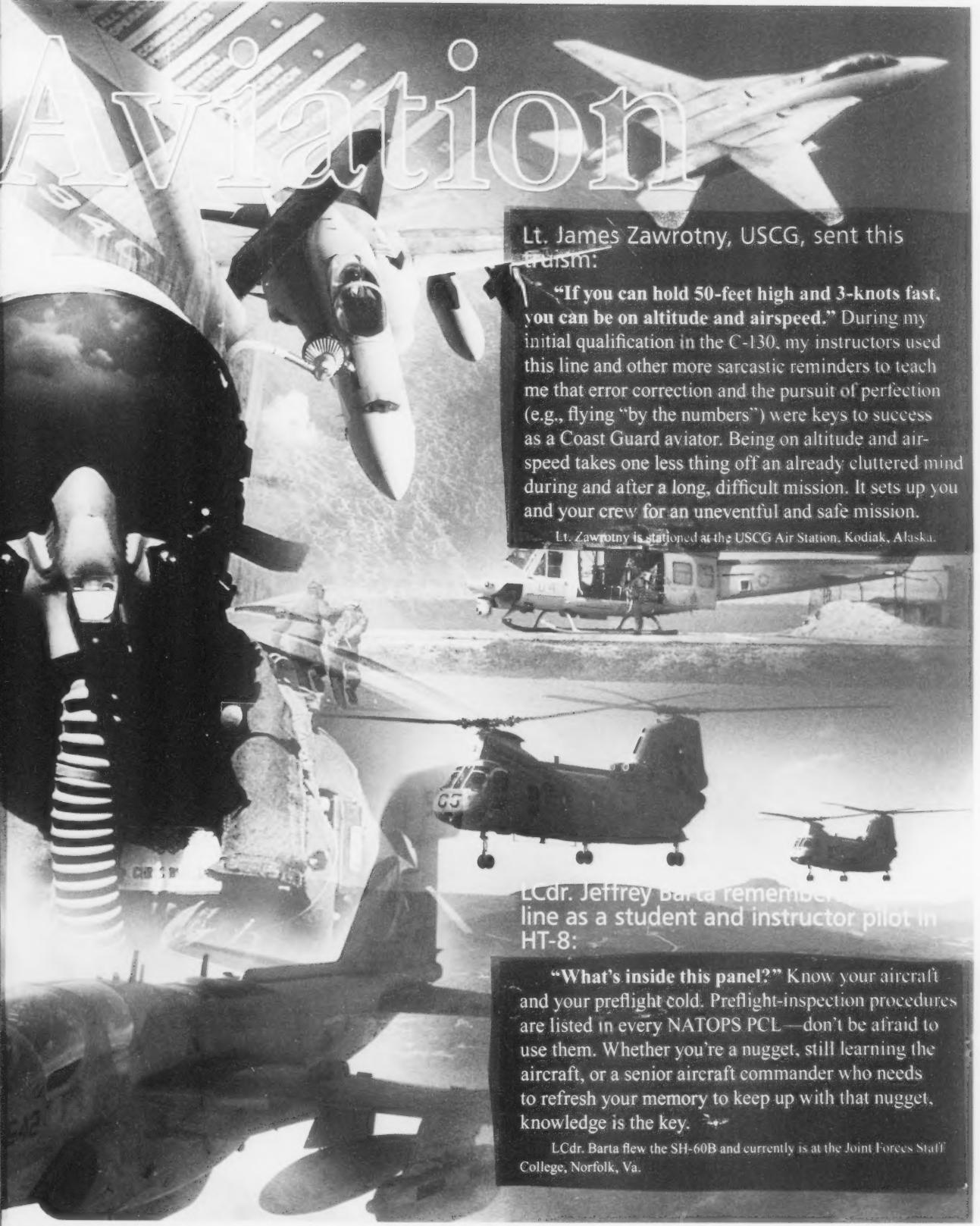
Approach asked our readers to share their truisms, those words of wisdom, they have gathered and incorporated into their flying careers. Here are a few of them with their contributor's comments.

From Lt. Russ Hellstern, USCG

"Honor the threat." Major John Christensen, USMC, was not only my on-wing in the glorious T-34C, he was the one man responsible (in a way) for saving my life hundreds of times over the past six years. Many instructors may feel their little words of wit and wisdom fall on deaf ears, but here is the one bit of ooh-rah prose that has saved my bacon time and time again: "Honor the threat." That's it. Simple, poignant and the mother of all truisms. Probably taken from his days in basic, his own flight training, or maybe from Norwich, his alma mater. That truism encompasses the spirit behind bringing yourself and your crew back alive. Maybe the threat is the enemy, or the weather, or even your copilot with a head cold. Or maybe it is that feeling you get in the pit of your stomach telling you that something just ain't right. Whatever it is, I have learned to view each potential hazard as a living, breathing threat. Honor each threat with preparation, examination, and the principles of operational risk management. By doing so, I have avoided some situations that, after a beer at the club, have made the hair on the back of my neck stand on end with the thought of losing the SGLI sweepstakes.

Major Christensen had a few other choice phrases not fit for print, but this one (although less colorful) has served me well and may help others who read this hit. Thanks, Hans!

Lt. Hellstern is the flight safety officer at the USCG Air Station, Sitka, Alaska.



Lt. James Zawrotny, USCG, sent this wisdom:

"If you can hold 50-feet high and 3-knots fast, you can be on altitude and airspeed." During my initial qualification in the C-130, my instructors used this line and other more sarcastic reminders to teach me that error correction and the pursuit of perfection (e.g., flying "by the numbers") were keys to success as a Coast Guard aviator. Being on altitude and airspeed takes one less thing off an already cluttered mind during and after a long, difficult mission. It sets up you and your crew for an uneventful and safe mission.

Lt. Zawrotny is stationed at the USCG Air Station, Kodiak, Alaska.

LCdr. Jeffrey Barta remembers this line as a student and instructor pilot in HT-8:

"What's inside this panel?" Know your aircraft and your preflight cold. Preflight-inspection procedures are listed in every NATOPS PCL—don't be afraid to use them. Whether you're a nugget, still learning the aircraft, or a senior aircraft commander who needs to refresh your memory to keep up with that nugget, knowledge is the key.

LCdr. Barta flew the SH-60B and currently is at the Joint Forces Staff College, Norfolk, Va.

Crew Resource Management

Situational Awareness
Assertiveness
Decision-Making
Leadership
Communication
Adaptability/Flexibility
Mission Analysis



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Driving a Classic

By LCdr. Rick Golbitz

When you drive a classic, you expect a few minor mechanical problems, but, hey, it's a classic, right?

It was business as usual, we had just kicked off our Caribbean detachment. The weather was hot, the mission was all too familiar, and our vintage-1970s, Lockheed P-3 Orion already had shot the No. 2 turbine in an impressive—even by P-3 standards—display of spewing oil and smoke. That was on our first mission and, as it turned out, our detachment's first three-engine landing. A talented team of maintainers replaced the bad turbine in minimal time, and we were able to reposition the aircraft the next day as scheduled. Following a five-hour transit, we put the plane to bed and prepared for our next mission.

Preflight was at oh-dark thirty. The country was new, but the weather, mission and aircraft were anything but. We left on time and made the 800-mile transit to our on-station point. After some fuel calculations, we decided to loiter the No. 1 engine to extend our on-station performance. We figured our bingo fuel based on a three engine, max-range transit at 10,000 feet, assuming a worst-case scenario of losing an engine and not being able to maintain pressurization. After the number-crunching, we set 23,000 pounds of fuel as bingo and settled into the mis-

sion. We were at 500 feet, 250 knots max range, with one hour of on-station fuel remaining when the fun began.

"Chips light, No. 3," the flight engineer called.

Immediately, the PPC, flying in the left seat, initiated a climb. I scanned the engine instruments, looked for secondary indications of an impending engine failure, saw none, and told the FE to restart the No. 1 engine. With the No. 1 engine coming back to life, we turned our attention to the No. 3 engine. As we did, there was an audible overspeed sound, accompanied by a loss of indicated-shaft horsepower on No. 3. We initially thought the engine had decoupled, but none of the other instruments confirmed that as the problem. I looked at the No. 3 prop, saw it was dry, and, with no other indications of a propeller malfunction, I called for the No. 3 E-handle. Relieved that the propeller went to full feather, we completed the emergency-shutdown checklist on No. 3 and the initiation-to-completion of the No. 1 restart checklist in less than two minutes.

As we basked in the afterglow and complimented one another on our NATOPS and CRM knowledge, we realized something was wrong—too many annunciator lights were on. Besides

all the normal lights, the No. 3 filter light was illuminated. In a harmony that would have made the Beach Boys proud, all five of us in the flight station said, "That's weird, why is that on?"

Our skipper (PPC), an instructor pilot with 4,000 hours in P-3s, was in the left seat. The CNARF-NATOPS-alternate-pilot evaluator, with 2,000 hours, sat in the right seat. The primary-pilot evaluator had 3,000 hours and looked over the skipper's shoulder while the CNARF NATOPS FE evaluator looked over the junior FE's shoulder. I felt confident there was little our vintage Orion could throw our way that we couldn't handle. That was before takeoff.

Now all five of us sat dumbfounded by one little light. Before we could determine why it was on, we had to handle what it meant to us. The light comes on when one or both low-pressure fuel filters on the engine become clogged and fuel bypasses the filters. This means the fuel from that engine's tank is contaminated and should not be used.

Our new problem became the 6,600 pounds of trapped fuel in the No. 3 tank. The fuel still was available but using it might adversely affect the other engines. Instead of the 27,000 pounds we thought we had, there were just over 20,000 pounds, nearly 3,000 pounds below our bingo

A photo-composite



fuel. Time to crunch our fuel numbers again and op-check our sweat pumps.

Pumps worked 4.0, but we still felt we were missing something. It wasn't until we tried to figure out what might have brought on the filter light that it became obvious. This plane is unlike the P-3s we normally fly because it is equipped with a survivability modification.

This mod includes flame-suppressant foam in the fuel tanks. The foam has been known to deteriorate and bring on the filter light.

Normally this is not a problem, except with the foam installed, you have five percent less fuel than what the fuel totalizer indicates. In our case, that was another 1,300 pounds of fuel we didn't have. With over 19,000 pounds of useable fuel, 4,000 below bingo and 800 miles from the nearest suitable alternate, the pucker factor became huge. We figured max-range airspeed and climbed to our best three-engine-cruise altitude.

Time to crunch more numbers, look at more charts, and start asking all the "what if" questions. What if we encounter bad weather? What if we are short on fuel? Will we use the fuel in tank three and, if so, when? And the biggest what-if of all: What if we lose another engine? Time for the flight engineers to work their chart magic and answer the \$64,000 question, "Would we make home plate with our fuel remaining, on only two engines?"

Using our new worst-case scenario, we faced an 800-mile, two-engine transit, at 10,000 feet, and unable to maintain pressurization. The FEs determined it would take 12,000 pounds of fuel to get home. Doing some quick math, we would land with 7,500 pounds of useable fuel without having to use the 6,600 pounds of questionable fuel in tank No. 3. Not a lot of fuel for a P-3, but we wouldn't be swimming. I stopped my SV-2 mental inventory and noticed the collective stress level in the flight station had diminished significantly as we all reached the same conclusion.

We spent the next three hours monitoring engine performance, fine-tuning fuel logs, and watching the miles wind down on the GPS. We made an uneventful three-engine landing (No. 2

of 3 for those of you keeping score at home), acutely aware we dodged a lot of the "what ifs."

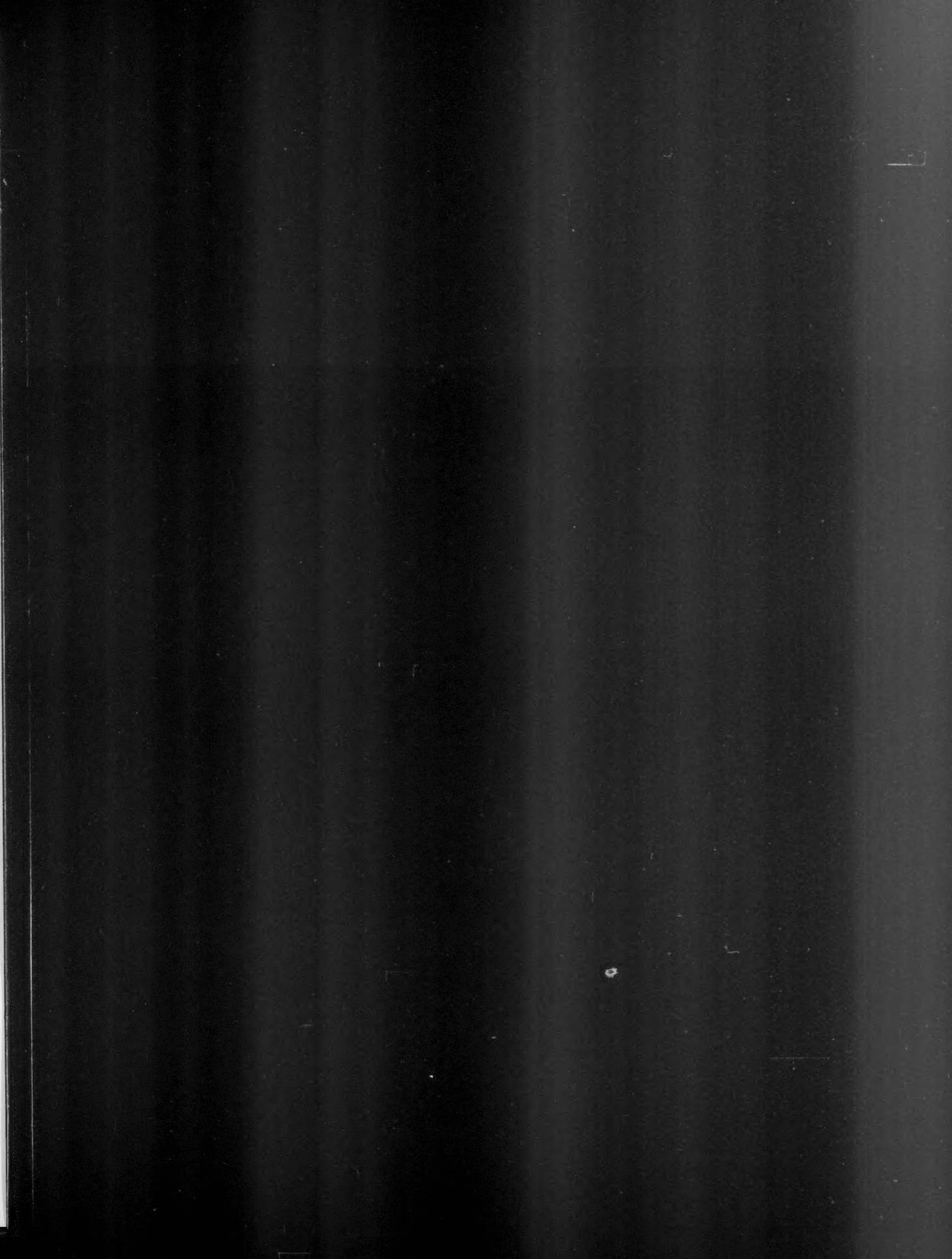
Two days later, following replacement of the No. 3 engine and several fuel-system components, the plane was readied for high-power-engine turns. Before starting the APU and as the flight engineer manually rotated the No. 2 propeller, he heard what he described as a "box of rocks" (an industry term), which aurally confirmed yet another problem. The No. 2 turbine was completely shot, again.

There was no indication of a pending turbine failure during flight, nor on postflight, most probably because of the APU noise. If we had lost the No. 2 turbine in flight, we would have been right in the middle of our new worst-case scenario. Following the replacement on the No. 2 engine, our "classic" Orion completed a post-maintenance check flight and returned to service.

We learned several lessons from this flight: some new, some not so new, but all equally important. First, strong NATOPS knowledge and timely execution of emergency procedures is essential when "it" starts to hit the fan. Each crew member knew their job and did it immediately. Second, always plan for your worst-case scenario, even if it keeps changing, and continuously revise your plan as necessary. Third, no matter how much experience you or your crew have, you still haven't seen it all. Do not let yourself become lax or over-confident. With over 15,000 hours of P-3 experience in the flight station, the mighty Orion still managed to throw us a curve ball. And finally, effective CRM is the difference between hitting that curve ball and striking out. In the P-3 community, we live and die by CRM. With a three-man flight crew and a 12-man tactical crew, it is the secret to our success.

Each member of our flight station, including the off-duty pilot and flight engineer, worked together, communicated and provided feedback, and operated freely within the CRM-friendly environment that pervades our community. We were able to handle an emergency and return one vintage P-3 and 14 aircrew to dry land. 

LCDR. Golbitz is with the Reserve ASW Training Center.



Da Nang, Republic of Vietnam, 1968



40

29 Palms, Calif,
during CAX, 2002



On February 11, 2002, after 40 years of dedicated and loyal service, KC-130 aircraft, bureau number 148895, was stricken from the active duty register. Accepted into the United States Marine Corps on Aug. 1, 1961, 895 served with VMGR's 152, 252, 352 and 234 and, in the

Navy with VR-22. It amassed 20,960.5 flight hours. The aircraft was stricken as a result of a flight mishap that, fortunately, spared the aircrew. It will be remembered by the many veterans who flew, trusted, depended, and loved this ol'Herc.

Lead-Turning

By Lts. Anthony Smith and Greg Provencher

Mid-Tour Guy:

I was on a good deal 2 v 2 DACT (dissimilar air combat training) flight in a section of Hornets against F-15s. The tactical portion of the flight went well, with many F-15 kills and no FA-18 kills. The prebriefed return to Hyakuri, a Japanese airfield neither of us had been to, was where we found the real action.

After the overhead break, I dropped my gear at the abeam position and ran through my landing-gear checks. I noticed my left main-gear indicator was flashing, which meant a planing-link



failure (unsafe gear). I waved off the approach, told lead what was going on, and noticed my fuel state was 2,000 pounds—the Hornet emergency-fuel state is 1,500 pounds. Lead read me the procedures from the PCL (pocket checklist), and I asked tower to rig the short-field arresting gear. Communication with the Japanese controllers in the tower was difficult. I repeated my request many times, but I wasn't sure if they understood which set of arresting gear should be rigged. I declared an emergency and again asked for the arresting gear to be rigged.

Lead joined and looked at my landing gear, which looked good, but we couldn't be sure.

Tower sequenced me in for a straight-in approach as we finished the gear-unsafe checklist. I had an MSP code (internal built-in-test) of 902; my flight lead thought it meant a landing gear proximity-switch failure, which would explain the unsafe-gear indication. However, it wasn't written in the PCL, and we were out of communication range of our home base, so we couldn't be sure.

I rolled out on final with 1,500 pounds of gas and wanted to take a trap, in case my landing gear collapsed. I told tower of the unsafe gear, asked for clearance to land, and confirmed the arresting gear was rigged. Tower reported the departure-end "barrier" was rigged.

Realizing I didn't have any arresting gear, I waved off the approach and tried to sort out the situation.

Lead landed before me and taxied to the transient line. I was a little worried. I felt confident in my landing gear, but it still could collapse on touchdown. I had heard stories of planing-link failures on landing that quickly took the aircraft off the side of the runway. I spent the next several minutes getting tower to rig the short-field arresting gear, as my gas gauge clicked down. I waved off my next approach with 1,200 pounds of gas and decided it was time to put the jet on the ground. I turned downwind and started the final approach, with unsafe gear and no arresting cable. I made an uneventful flared landing, and the unsafe-gear indication went away on touchdown.

the System

On deck, we called our maintenance department and asked them what the MSP Code 902 meant. They confirmed my lead's suspicions that it was a proximity-switch failure of the planing link on the main-landing gear. Knowing this information in flight would have made me feel better about making a non-arrested landing, especially with a good visual inspection of the landing gear. After debriefing this event at a squadron AOM, we decided to submit a NATOPS change to include a step to check for MSP Code 902 if a proximity-switch failure is suspected. This squadron discussion proved valuable for a similar emergency a few months later.

New Guy:

Four months later, I found myself flying Dash 4 in a night division self-escort strike out of Kadena Air Force Base in Okinawa, Japan. The tactical portion of the hop went well, with some slaying of the red air and bombs on-time, on-target. We split into two sections for the 100-mile transit home to the mandatory night straight-in for noise sensitivity.

As my lead dropped me off at seven miles, I lowered the gear and flaps and noticed a flashing, right main-gear indication. As noted, this is the indication in the Hornet for a planing-link failure. I told lead about the gear problem. He discontinued his approach and told tower we wanted to orbit at 3,000 feet to troubleshoot. On the join-up, lead broke out the night-vision goggles to inspect.

While lead went through the PCL, a Hornet guy on base frequency backed us up with the big NATOPS. By this time, we had completed a lap around the pattern, and I was at 2,300 pounds of fuel and burning quickly—gear down and flaps half. Lead remembered the emergency our squadron had in Hyakuri a few months ear-

lier, so he asked me to read my MSP codes to check for the failed-proximity-switch code 902. Sure enough, it was there! This indicated the switch was not working, which reassured me, especially since lead reported my landing gear looked good.

The procedure for a planing-link failure is to make a fly-in arrested landing with LSO assistance. We called base and asked for an LSO, but there was no way to get him out to the runway. By now, we had completed two laps around the pattern, and I was down to 2,000 pounds. Fortunately, Kadena has two 11,000-foot runways with two sets of arresting gear on each. With the LSO unavailable, 1,700 pounds of gas remaining, and no more in-flight troubleshooting to do, I decided to attempt a fly-in arrestment. Dash 1 from the other section read me the "loss of directional control on ground" emergency procedures for a refresher. With knowledge of a failed-proximity switch and a good visual inspection, I felt confident my landing gear would hold.

I rolled out on final with 1,500 pounds of gas and wanted to take a trap, in case my landing gear collapsed.

Nevertheless, my heart was racing, and my hands were sweating in anticipation of a large swerve on touchdown. I made an uneventful trap while lead circled overhead for a possible rejoin. I was thankful this same emergency had occurred in our squadron a few months earlier. How else would I have known which MSP code to look for? We had submitted a NATOPS change after the first emergency, but we were actually able to use the information before it was formally accepted. I'll take that coincidence any day. 

Lts. Smith and Provencher fly with VFA-192.

The Plan

By Lt. Patrick Beam

t was a good deal any JO would jump at: a chance to get off the boat after only five days of a 15-day FRS and air wing CQ detachment. We were to fly two HH-60Hs cross-country from Jacksonville to San Diego. Since there were other commitments for the CQ detachment, an H2P and I would be joined by two HACs from another squadron. After leaving the boat, we spent a week at the squadron, while a ground crew flew to Jacksonville to prepare the aircraft for transfer. When the transfer was complete, we flew to Jacksonville to pick up the aircraft for the cross-country to San Diego.

Although we were late taking off, we finished our first and only leg of the first day—IFR from Jacksonville to NAS Pensacola—with no problems. The plan for the next day was to launch around 0800 and to stop in west Texas for the night. We briefed the next morning, and, while the plane captains completed their turn-around (TA) inspections, we checked weather and laid out our flight plan for the day.

The first stop would be Acadiana, La. We filed IFR flight plans since the weather wasn't good enough for VFR.

When we arrived at the flight line, the plane captain for my aircraft told us he was concerned with maintenance discrepancies found during his TA. The HAC wanted to discuss these discrepancies with the Jacksonville squadron who had turned the aircraft over to us. After talking to them, the HAC still wanted to talk to one of our squadron reps in San Diego. We knew our squadron wanted to keep both aircraft together, so the other crew waited until our aircraft was ready to go. Several hours later and after numerous phone calls, countless ground turns, and a 30-minute flight to test the system, everything checked good. We finally were ready to get on the road.

It was now 1400, and the two HACs went to base ops to file flight plans for the third time, while the other H2P and I readied the aircraft for departure. The field now was VFR, but since we had filed IFR the two previous times, I assumed the plan would stay the same. We were at the taxi checklist when I heard the other aircraft call for taxi, "Six one five and flight, taxi, VFR."

This was the first time the other H2P and I were aware we would be flying VFR and in formation. We

had briefed formation for the day before but not for this flight. I had not looked at a VFR sectional for the leg we were going to fly. I asked my HAC what the plan was, and he told me we would follow the same airways filed previously but fly VFR. We took off as Dash 2 under radar control. Once clear of the tree line around the field, we immediately saw the weather to the west was worse than at the field.

When we left Pensacola airspace, we were cleared VFR to the west and advised of a 300-foot tower along our flight path. Because of our low altitude, we were below their radar coverage. The ceilings were 500 feet, and visibility was about two miles. As we continued on course, the ceilings dropped to 300 feet with 1.5 miles visibility. We had a good GPS fix, but I didn't know lead's plan to get through the Mobile Class C airspace, which we would be approaching in 25 minutes.

I became very concerned. Our present heading would take us close to large radio towers in eastern Alabama. I told my HAC I was not comfortable with the situation. He agreed the weather was getting bad, and he began coordinating with lead to devise a new plan. We decided to change our current course, turned south, and stayed along the coast. We would follow Mobile Bay to the north, and, when within range, we would try to contact Mobile approach. It sounded like a good plan, so we worked our way down to the coastline. We weaved through water towers and beach-line construction cranes, searching for a spot to cut north to Mobile Bay.

Because we had flown commercial to Jacksonville, our flight gear had two big problems. The flotation gear and HEEDS had been removed from our vests. Additionally, the plane captains in both aircraft lacked floatation gear. As we proceeded toward Mobile over the bay, the ceilings dropped even lower, leaving no way to proceed unless we were picked up IFR. Both aircraft orbited over the water while we figured out what to do. Visibility was so low no visual-outside reference existed to aid in determining our position. I felt uneasy about being over water for an extended period with no flotation.

We weaved through water towers and beach-line construction cranes, searching for a spot to cut north to Mobile Bay.

Lead tried to get comms with Mobile approach, while we tried to get through to the local FSS to change our flight plan. We could not contact anyone while at 200 feet in a holding pattern over Mobile Bay. Once again, we had to come up with a new plan. One aircraft was without a useable aux-fuel tank, so fuel became a consideration now that we had added about an hour to our flight time. Our first option was to return to the coastline and follow it to the west, until we reached a good place to cut north to our destination. Our second option was to return to NAS Pensacola. With sunset about an hour away, we decided to head back to Pensacola. Better to turn and run and live to fight another day. So it was back to the coastline, and we turned toward Pensacola.

Nearing Pensacola airspace, we were not able to get comms with approach because of our low altitude. We hugged the airspace, searching for a hole to climb through to get in contact with approach. Twenty-five minutes later, we successfully picked up separate squawks and shot PARs into NAS Pensacola. We broke out at a comfortable 400 feet after vectors had taken us seven miles out over the water. We shut down on the transient line next to two SH-60Fs, who just had flown in VFR from the west. They were glad to hear we had decided to fly back to Pensacola because they had been at 200 feet, in one-half-mile visibility, hugging the coastline on their way from Louisiana to Pensacola.

Despite one of the most constructive debriefs in my aviation career, I could have done without this flight. There was a lack of crew coordination between the two crews. Fifteen minutes would have been enough to discuss the route to Acadiana and to familiarize ourselves with what we would need to make it VFR.

Another weak point was my lack of assertiveness when I heard the call for taxi VFR. I was not ready to navigate VFR, even if I was only Dash 2. As wing, we often feel we are just along for the ride; in actuality, it is our responsibility to back up lead in navigation. When we saw bad weather, we easily could have asked Pensacola approach for a climb to stay in radar contact, then file a flight plan to continue IFR. Heading for the coastline was a good idea at the time, but spending as much time over the water as we did without flotation was not a comfortable feeling, nor was having plane captains without any water-survival gear. ☺

Lt. Beam flies with HS-8.

Mooove Over, Bessy!

LCdr. Ken Durbin

I was only slight left wing down and correcting on what was my best guess at final. I felt a little high-on-profile but wasn't sure. It was hard to tell exactly where I was because it was a grass field on Mustang Island, and I was attempting to land my newly acquired Eipperformance Quick Silver ultralight aircraft.

It was my first landing in this single-seated flying machine and my fifth landing since I received abbreviated training in a loaner aircraft. I was completely on my own. No radios, no control tower, no asphalt, just me and a few sea gulls.

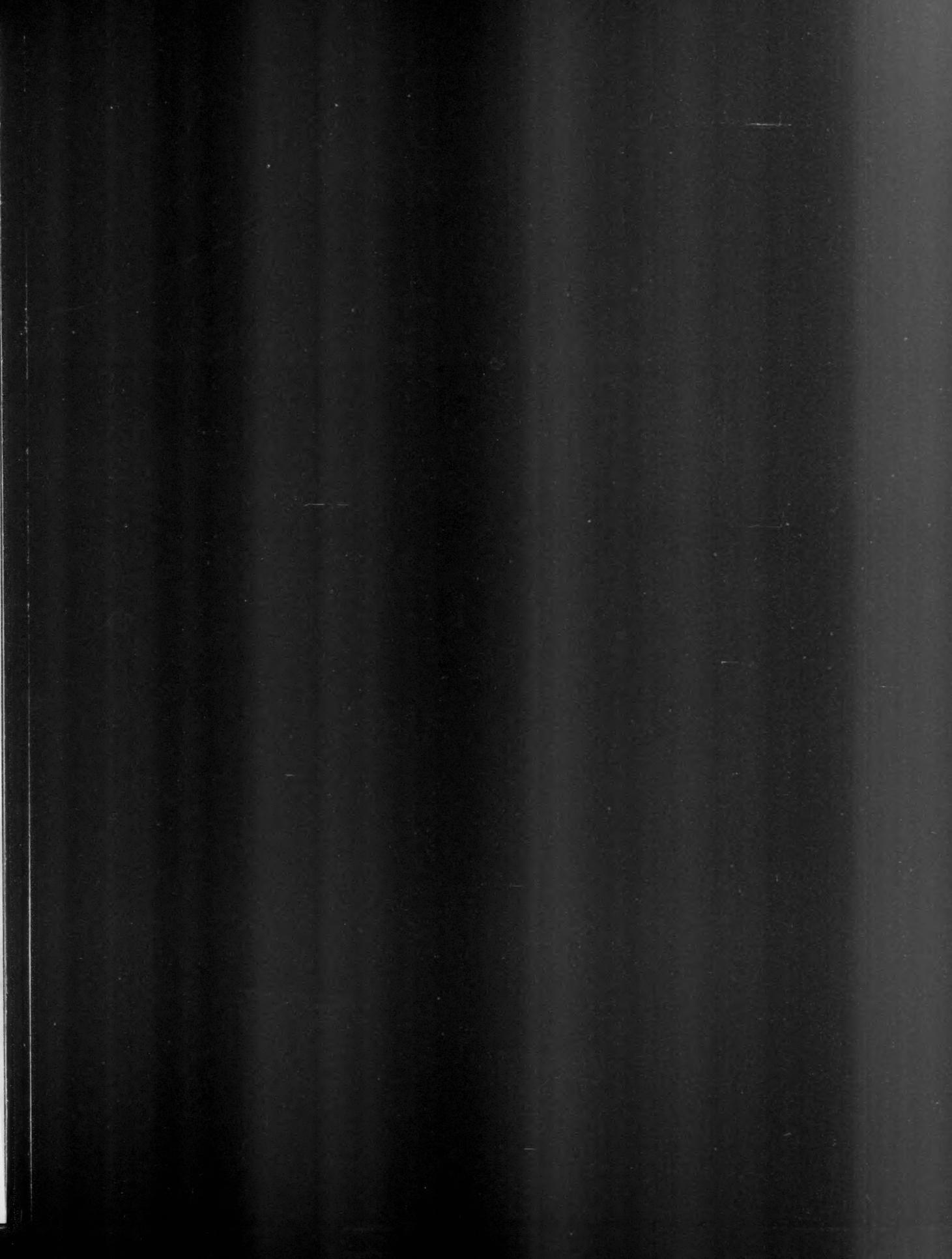
A farm road and high-voltage power lines bordered the field. To my novice eye, it looked like I was about to land a little long. As I approached midfield, I looked beyond the barn that sat at the end of the landing strip. There was a fence, a road, power lines, and sand dunes. It occurred to me, if I waited much longer to waveoff, I might be forced under the power lines and above the 15-foot sand dunes.

I had flown over the sand dunes earlier in the day and the thermals that rise off them tortured my ultralight aircraft and me. I decided to wave off and rolled the motor-

cycle-grip-accelerator to full power. My 30-hp, two-stroke engine, screamed back to life and drove my 36-inch, balsa-wood prop to its maximum rpm. I pulled back on the stick, started to climb, and then banked left. Since I was nose high and slight left wing down, I felt a gust of wind, or burble, that had risen over the dunes and barn in front of me. It hit my kite like a brick wall. I felt the aircraft pitch up and momentarily slow. I could feel the increased drag. I adjusted my pitch forward slightly to decrease the climb angle. It appeared to be only slight turbulence.

I was 45 degrees through my shallow turn, at about 350 feet, when it happened. The engine's whine increased to a screaming pitch, along with a corresponding increase in RPM. I felt no G-load increase. I looked at the engine block bolted to the root tube above me. There was no visible sign of failure, but I imagined the increased RPM wasn't a good thing. I looked over my shoulder at the prop—it was windmilling and provided nothing in the way of forward thrust. I rotated my twist grip to idle and rolled wings level.

I was going to land whether I wanted to or not. With a 7-to-1 glide ratio at 350 feet, I had about a half-mile until



I met turf. My instrumentation consisted of an altimeter on a string around my neck—it was flapping in the wind behind me. I wasn't sure of my altitude, and I didn't feel it was important to wrestle with the string behind me. Regardless of what the gauge around my neck might tell me, I was sure it wasn't enough for a 90-degree turn into the wind, let alone a 360. What I saw in front of me was what I got—and it wasn't good.

I was lined up for a crosswind landing and headed for the middle of a rather large gathering of "moo-moos." With no airspeed indication, I was taught—as brief as my instruction was—that to avoid stall, I needed to keep the wings level on the horizon. To do so, I would look left and right to check that the wingtips were parallel with the visible horizon. It appeared that, unless I pulled back on the stick, I would hit one of those milk producers right in the nether regions. I started to yell as I approached them at about 50 feet.

Here is a data point for you. If you never have heard your voice change a few octaves as your adrenaline-filled vocal chords attempt to move grazing cattle, then I dare say, you cannot truly appreciate humility nor self-embarrassment. It was the most ridiculous thing I ever have

dipped to within two feet of the turf, and my left wheel rose off the ground as I balanced the aircraft on the nose and right landing gear. The balancing part sounds like skill—it was luck.

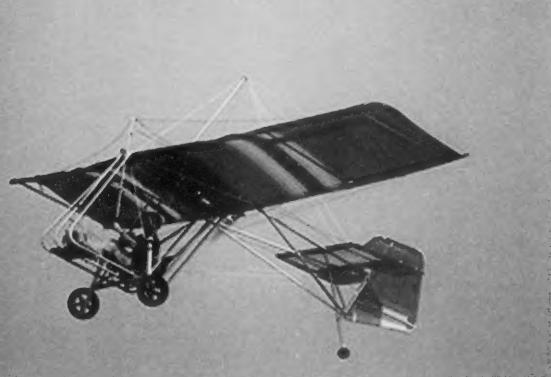
As I came into the wind, I centered the stick and rolled to a stop. The kite now rested in a huge muck puddle. My bovine friends hardly noticed the wide-eyed and trembling idiot who had just dropped into their pasture. I sat there for what was probably 15 minutes. I shut down the engine, climbed out, and looked back at the half-mile I would have to drag this cursed contraption to the barn. The dealer—my instructor—landed a few minutes later. I asked him if he would mind helping drag my flying machine to the barn. He rather gleefully explained I should fly it back. I mentioned something about his mental health and his genealogy, while he flew off to retrieve a wrench and a prop-drive belt. He returned and replaced the belt.

I waited until the shaking stopped, and my voice no longer sounded like Bobby Brady, before I strapped in. I pulled the start chord, and the engine whined back to life. I did fly it back and tucked it away.

What I appreciate most about this story is the simplicity of it. There is the simplicity of the guy (simpleton) who decides he is a pilot with inadequate training. There is the simplicity of design, with respect to that aircraft. Up until that flight, I didn't have any real emergency training. There was no discussion of engine failures or ripped sails. It made sense to me that I had to land; the absence of lift made that obvious. It also made sense to me that the engine could not sustain the high RPM for much longer. So I backed it to idle and decided to fix it on deck. The lack of sufficient altitude to turn into the wind alluded to a crosswind landing. The high crosswinds meant, once on the ground, I would have to get the aircraft pointed into the wind or I'd flip it like an excited cheerleader.

I preach basics during preflight briefs, and I try to drive them home during NATOPS checks. I explain the only time you may go wrong is when you try to communicate across species. Had my voice not cracked and had my bovine friends reacted to my cries that they disperse, I might have landed in a stampede. That would have completely changed the texture of this story. I've given up flying ultralight aircraft and now fly the SH-60B. So far, I haven't had to make any landings that might disturb grazing cattle. Knock on cow patties. 

LCDR Durbin is the OinC for HSL-51 Det 6. He is assigned to the Forward Deployed Naval Forces (FDNF) in Atsugi, Japan.



heard and was the source of great disappointment when the out-of-body experience was over, and I recognized my voice. Evidently, the cows thought it ridiculous as well, for not one of them moved. In hindsight, that was fortunate, because I vertically cleared the last one by six feet.

Surprised by my good fortune, I almost forgot about making a crosswind landing in a 400-pound-motorized kite. As soon as the aft two wheels of my tricycle landing-gear touched earth, I pushed the stick hard right and completed a 90-degree turn into the wind. My right wing

Ready Room Gouge



There is no reason to fly
through a thunderstorm.



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